SURINAME
PROJECT PROFILE (PP)
INVESTMENT GRANT

I. BASIC DATA

Project Name:	Development of Renewable Energy, Energy Efficiency and Electrification of Suriname		
Project Number:	SU-G1001		
Project Team:	Team Leader: Jesus Tejeda Ricardez (ENE/CEC); Alternate Team Leader: Christiaan Gischler (INE/ENE); other members Alejandro Melandri (INE/ENE); Steven Hofwijks (CCB/CSU); José Emiliano Detta (INE/ENE); and Mónica Lugo (LEG/SGO) under the supervision of Leandro Alves, Energy Division Chief (INE/ENE), and Marco Nicola, Representative in Suriname (CCB/CSU).		
Beneficiary:	Republic of Suriname		
Executing Agency:	The Ministry of Natural Resources (MNH)		
Amount and Source:	GEF grant	US$	4,400,000
	Total:	**US$**	**4,400,000**
Execution Timetable:	Execution		66 months
	Disbursement		72 months
Exceptions to Bank Policies and Procedures:	None		
Environmental and Social Review:	Policies triggered: B.01; B.02; B.03; B.07; B.17 Classification: C		

II. GENERAL JUSTIFICATION AND OBJECTIVES

2.1 **Background.** With an area of 163,820 square kilometers (km^2) and a population of approximately 492,000, Suriname is the smallest and the youngest sovereign country in South America that achieved independence in 1975. Being a former Dutch colony, it is one of the most ethnically diverse countries in the world hosting Amerindian tribes, descendants of Africans that arrived into Suriname in the 17^{th} and 18^{th} centuries, descendants from ex-plantation workers from India, Java and China who arrived in the 19^{th} and 20^{th} centuries, and others. Approximately 90% of the population lives in the coastal area along the Atlantic. The interior of Suriname (the Hinterland) and the Amazonic Jungle are sparsely inhabited, predominantly by Amerindians and the Maroons. The Maroons are descendants from African plantation workers that fled the plantations. They constitute the largest community in the Hinterland, representing approximately 15% of the population in that area.

2.2 During the period of colonization, the main cities and economic activity were developed in the fertile, low-lying zone near the Atlantic Ocean. More than half of the population is concentrated in Suriname's capital, Paramaribo, located at the Suriname River. There are estimated 217 villages in the interior, of which many can only be reached by boat or plane. The road infrastructure southward is limited and has been developed to serve the mining industry.

2.3 **Sector Knowledge.** The Energy Sector (both in the Electricity and Oil sectors) in Suriname is characterized by a large participation of the Government of Suriname (GoS). *Staatsolie Maatschappij Suriname N.V.* (Staatsolie), the State Oil Company of Suriname, is involved in all aspects of exploration, production, refining and marketing of crude oil and refined products. The national oil production, approximately 15,400 barrels per day (bbl/day) in 2009, matches total demand (13,000 bbl/day). Staatsolie's refinery capacity is 7,000 bbl/day and refined oil products, including diesel and gasoline, are imported.

2.4 **Electricity Sector.** *Suralco's Afobaka* Hydropower Plant (Afobaka), with an installed capacity of 189-MegaWatts (MW), is the backbone of Suriname's electricity supply. The electricity is transported via a 161-kiloVolt (kV) transmission line to *Paranam*, where *Suralco's* aluminum smelter is located. *Suralco* also owns a 78-MW thermal power plant at *Paranam*. *NV Electriciteitsbedrijf Suriname* (EBS), the national power company, buys electricity from Afobaka under an agreement with *Suralco*. After 1999, when *Suralco* closed down the aluminum smelter, EBS' purchases increased substantially (from 50-MW in 1996 to 120-MW in 2007).

2.5 **Regulatory Framework and Tariffs.** The electricity sector in Suriname is based on contractual arrangements between the GoS and public and private companies. The responsibility for the sector is assigned to the Ministry of Natural Resources (MNH). MNH determines and approves the electricity tariffs as prepared by its Energy Advisory Committee (EAC). The *Brokopondo* Agreement of 1957, is the mainstay of Suriname's electricity supply and is based on the concession for bauxite mining to *Suralco*.

2.6 The concessional structure and contracts do not cover the production, transmission and distribution of electricity and do not provide a solid basis to develop the electricity sector, improve the quality of the service delivered, and stimulate cost-effectiveness. EBS is owned by the GoS and monitored through MNH; also Department for Rural Energy (DEV, acronym in Dutch), in charge of rural electrification, depends on this Ministry. The lack of autonomy of both sector agents has limited modernizing the sector and to recover the cost of the electricity service. Tariffs in the Electricity Supply Paramaribo and Surroundings (EPAR) area are in the order of US$0.07/kiloWatt hour (kWh), at an estimated average generating cost of US$0.20/kWh. Renewable Energy (RE) technologies have been considered a major option for Suriname since the 1980s.

2.7 **Problem.** In the absence of a specific regulatory framework and authority the MNH has the primary responsibility for the sector including rural electrification; with limited resources to effectively undertake regulatory tasks. The tariff policy and the tariff adjustments are under its responsibility. The EAC is involved in the development of electricity tariffs but it only has an advisory role.

2.8 In the Hinterland, the GoS has heavily subsidized energy access to keep electricity and fuels within reach of the poor, inducing inefficiencies, increasing cost per unit of electricity and difficulties to meet demand.[1] In the coastal zone,

[1] Maroon communities in the Hinterland have diesel power generation subsidized by the GoS at high cost. The GoS' priority is to promote the use of cost-effective technology to mitigate the use

sufficient hydropower capacity and favorable hydrocarbon prices have hindered the establishment of tariff rates that are sufficient to cover Operation and Maintenance (O&M). In the last decade, this situation has represented a burden to new investments due to the low financial capacities of EBS and to the GoS to cover O&M costs of the service both in coastal zone and in the Hinterlands.

2.9 RE technologies are still largely unknown in Suriname, as EBS and DEV rely almost exclusively on thermal power plants (operating on diesel or heavy fuel oil). Rural electrification initiatives using RE technologies were mostly unsuccessful as a result of design flaws, O&M failures and a general lack of follow-up due to internal conflicts. RE systems for on-grid electricity production (i.e., solar PhotoVoltaic (PV), wind, biomass, and small-hydro) and thermal systems (i.e., solar water heaters) are virtually non-existent, but some private hybrid systems (PV-diesel) exist to power remote antennas. By consequence, there is limited knowledge on system design, resource assessment, project risks and O&M aspects in the energy sector. Further, the existing grid systems are not ready to absorb a substantial volume of decentralized RE generating capacity.

2.10 Concerning renewable power systems, there is no experience with business models such as Independent Power Producers (IPP), for grid-connected wind energy, hydro, PV or cogeneration, community-based operation (for hydro and PV in the interior), sustainable operation schemes under responsibility of DEV; or net metering (retail users feeding PV or wind power into the grid).

2.11 **Government Strategy.** The GoS has acknowledged the need to strengthen the electricity sector. In follow-up to the results drafted for the Government by the company KEMA (report 2008) and the earlier Masterplan (2000), a National Strategy is being devised with support from the Inter-American Development Bank (IDB), to design and establish a Sustainable Energy Framework for Suriname (SEFS). The objective of the SEFS is to increase the efficiency, transparency, sustainability and accountability of the power sector.

2.12 **Solution.** The proposed project will facilitate the development of RE, EE, and Electrification of Suriname (the Project), by: (i) strengthening of the regulatory and institutional framework; (ii) demonstrating RE and EE technologies; and (iii) Strengthening of institutional arrangements, business models and stakeholder skills. The Project will be complementary to the Sustainable Energy Framework for Suriname (SEFS, SU-L1022) as it addresses barriers that are specifically related to the demonstration and deployment of RE and EE technologies in Suriname. These barriers include: (i) the lack of information on RE resources (i.e., wind, and hydro); (ii) the need for demonstration of on-grid RE technologies and in isolated situations; (iii) the need to demonstrate effective O&M models, as well as economic feasibility; and (iv) the need for additional policy development.

2.13 **IDB's Strategy.** The Project is consistent with the latest IDB Country Strategy (2011-2015) (Strategy), the overall objective of which is to support Suriname's reform agenda. The Strategy identified seven priority areas, were energy being one of them. The Strategy mentions that, among others, it will focus on: (i)

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of diesel for power generation in the Hinterland and to increase the coverage index by bringing electricity to isolated communities.

revamping the current regulatory framework by creating an independent energy authority, revising regulations, and introducing a new tariff structure that includes a regime for rural electrification; (ii) modernizing and expanding the generation (introducing lower carbon intensity technology, including hydro, solar photovoltaic, and co-generation); and (iii) increasing the use of efficient technologies for conventional fuel.

2.14 **Ninth General Capital Increase (GCI-9).** The Project is also aligned with the IDB's Framework of a New Institutional Strategy under its sector priorities and preferential support to less developed Latin American and Caribbean (LAC) countries. This Project contributes to the goal of: (i) supporting development in small and vulnerable countries; and (ii) assisting borrowers in dealing with climate change, sustainable energy, including RE, and environmental sustainability.

2.15 **Coordination with other Multilateral Development Banks (MDBs).** The basis for the Project is founded on the SEFS that is presently under preparation by the GoS with support from IDB. The SEFS will be implemented through Government-budgeted activities, IDB loans (SU-L1022 and SU-L1009) and Technical Cooperation (TC) (SU-T1055, SU-M1019 and SU-T1042) that will be coordinated to support the Project.

III. GENERAL JUSTIFICATION AND OBJECTIVES

3.1 **Project's Goal and Purpose.** The general objective of the Project is to increase the efficiency, transparency, sustainability and accountability of the power sector. The specific objective of the Project is to contribute to reducing GreenHouse Gas (GHG) emissions from Suriname's energy sector by introducing RE and EE technologies and increasing access to sustainable energy in the interior of Suriname.

3.2 The expected components of the Project are:

3.3 **Component 1. Strengthening of the regulatory and institutional framework to implement RE and EE technologies in Suriname.** Component 1 pursues the preparation of a national strategy to promote the implementation of RE technologies and EE measures and technologies in Suriname, including the approval of a detailed action plan.

3.4 **Component 2. Demonstration of RE and EE technologies for interconnected and isolated grids and for rural electrification in the interior.** Component 2 will deliver detailed feasibility studies and technical designs for the RE and EE demonstration pilots that has passed the selection process. This process involves prefeasibility studies, consultations with user groups, as well as criteria to judge socio-economic impact, cost-effectiveness, project risks, visibility, and replication potential.

3.5 **Component 3. Strengthening of institutional arrangements, business models and stakeholder skills to successfully develop, operate and maintain RE and EE technologies in Suriname.** Component 3 supports efforts to strengthen local capabilities in RE and the development and demonstration of business and operational models for rural electrification.

IV. TECHNICAL ISSUES

4.1 **Studies.** The IDB has been carrying out some studies in the sector which include: (i) Suriname Power Sector Assessment and Alternatives for its Modernization; and (ii) the Bioenergy Potential of Suriname. Other studies to be conducted during Project preparation will include: (i) support for the electrification of the Interior; and (ii) overall technical and economical assessment of the power sector.

4.2 **Executing Agency (EA).** MNH will be the Executing Agency (EA) of the Project as this agency is responsible for rural electrification. For this purpose, a Project Executing Unit (PEU) will be established to execute all the Project components in close coordination with Suriname's Fund for the Development of the Interior (FOB) and EBS. At the strategic level, the GoS will establish a high-level Project Steering Committee (Steering Committee) (composed of the MNH, the Joint Desk and the Ministry for Rural Development) to provide guidance on strategic and policy issues related to the Project, including recommendations on the Project's priorities, and to monitor progress of implementation according to the agreed schedule. The Steering Committee will meet at least once each semester to discuss progress and address recommendations on main issues in order to move forward.

4.3 **Results.** The expected outcomes of the Project would be: (i) strengthened regulatory and institutional framework to implement RE and EE technologies in Suriname; (ii) RE and EE technologies have been demonstrated for interconnected and isolated grids and for rural electrification in the interior; and (iii) strengthened institutional arrangements, business models and stakeholder skills to successfully develop, operate and maintain RE and EE technologies. The key outputs of the Project would include: (i) assessment of the potential of RE resources; (ii) selected RE demonstration pilots implemented in the urban areas and the coastal plain; (iii) a portfolio of solar-PV electrification projects implemented in rural communities in the Hinterlands; and (iv) the technical and operational feasibility of small hydropower for rural electrification in Suriname demonstrated by the implementation of selected investment pilots.

V. SAFEGUARDS AND FIDUCIARY SCREENING

5.1 **Environment**. The direct impacts of the Project are unlikely to be substantive as most technologies to be implemented have low environmental and social impacts. Thus, according to the Safeguard Policy Filter and Safeguard Screening Form (Annex II), the Project has been classified as Category C, thus no Environmental and Social Strategy is required.

VI. RESOURCES AND TIMETABLE

6.1 The tentative date for submission of the POD to OPC is August 8, 2012, and the Global Environmental Facility (GEF) Proposal to the Board is September 26, 2012. The Project team has planned three missions during 2012 to discuss with incumbent authorities the strategy for the preparation and implementation of this program and to analyze the technical and institutional readiness of the program in further detail.

SAFEGUARD POLICY FILTER REPORT

This Report provides guidance for project teams on safeguard policy triggers and should be attached as an annex to the PP (or equivalent) together with the Safeguard Screening Form, and sent to ESR.

1. Save as a Word document. 2. Enter additional information in the spaces provided, where applicable. 3. Save new changes.

PROJECT DETAILS	**IDB Sector**	ENERGY
	Type of Operation	Other Lending or Financing Instrument
	Additional Operation Details	
	Investment Checklist	Generic Checklist
	Team Leader	Tejeda Ricardez, Jesus Alberto (JESUST@iadb.org)
	Project Title	Development of Renewable Energy, Energy Effic. and Electrification of Suriname
	Project Number	SU-G1001
	Safeguard Screening Assessor(s)	Detta, Jose Emiliano (jdetta@IADB.ORG)
	Assessment Date	2012-05-07
	Additional Comments	

SAFEGUARD POLICY FILTER RESULTS	**Type of Operation**	Investment Grants	
	Safeguard Policy Items Identified (Yes)	The Bank will make available to the public the relevant Project documents.	(B.01) Access to Information Policy– OP-102
		The operation is in compliance with environmental, specific women's rights, gender, and indigenous laws and regulations of the country where the operation is being implemented (including national obligations established under ratified Multilateral Environmental Agreements).	(B.02)

		The operation (including associated facilities) is screened and classified according to their potential environmental impacts.	(B.03)
		The Bank will monitor the executing agency/borrower's compliance with all safeguard requirements stipulated in the loan agreement and project operating or credit regulations.	(B.07)
		Suitable safeguard provisions for procurement of goods and services in Bank financed projects may be incorporated into project-specific loan agreements, operating regulations and bidding documents, as appropriate, to ensure environmentally responsible procurement.	(B.17)
	Potential Safeguard Policy Items(?)	No potential issues identified	
	Recommended Action:	Operation has triggered 1 or more Policy Directives; please refer to appropriate Directive(s). Complete Project Classification Tool. Submit Safeguard Policy Filter Report, PP (or equivalent) and Safeguard Screening Form to ESR.	
	Additional Comments:		

ASSESSOR DETAILS	**Name of person who completed screening:**	Detta, Jose Emiliano (jdetta@IADB.ORG)
	Title:	
	Date:	2012-05-07

SAFEGUARD SCREENING FORM

This Report provides a summary of the project classification process and is consistent with Safeguard Screening Form requirements. The printed Report should be attached as an annex to the PP (or equivalent) and sent to ESR.

1. Save as a Word document. 2. Enter additional information in the spaces provided, where applicable. 3. Save new changes.

PROJECT DETAILS	**IDB Sector**	ENERGY
	Type of Operation	Other Lending or Financing Instrument
	Additional Operation Details	
	Country	SURINAME
	Project Status	
	Investment Checklist	Generic Checklist
	Team Leader	Tejeda Ricardez, Jesus Alberto (JESUST@iadb.org)
	Project Title	Development of Renewable Energy, Energy Effic. and Electrification of Suriname
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	Assessment Date	2012-05-07
	Additional Comments	

PROJECT CLASSIFICATION SUMMARY	**Project Category:** C	**Override Rating:**	**Override Justification:**
			Comments:
	Conditions/ Recommendations	• No environmental assessment studies or consultations are required for Category "C" operations. • Some Category "C" operations may require specific safeguard or monitoring requirements (Policy Directive B.3).Where relevant, these operations will establish safeguard, or monitoring requirements to address environmental and other risks (social, disaster, cultural, health and safety etc.).	

		• The Project Team must send the PP (or equivalent) containing the Environmental and Social Strategy (the requirements for an ESS are described in the Environment Policy Guideline: Directive B.3) as well as the Safeguard Policy Filter and Safeguard Screening Form Reports.

SUMMARY OF IMPACTS/RISKS AND POTENTIAL SOLUTIONS	**Identified Impacts/Risks**	**Potential Solutions**

ASSESSOR DETAILS	**Name of person who completed screening:**	Detta, Jose Emiliano (jdetta@IADB.ORG)
	Title:	
	Date:	2012-05-07

SURINAME

DEVELOPMENT OF RENEWABLE ENERGY, ENERGY EFFICIENCY AND ELECTRIFICATION OF SURINAME
SU-G1001

ENVIRONMENTAL AND SOCIAL STRATEGY

According to the Safeguard Policy Filter and Safeguard Screening Form (Annex II), this project has been classified as Category C, thus no Environmental and Social Strategy is required.

SURINAME

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INDEX FOR PROPOSED SECTOR WORK

Issues	Description of works	Expected Dates	References & hyper links to Technical files
Technical aspects	Suriname Power Sector Assessment and Alternatives for its Modernization	December 2008	IDBDocs#36846492
	Energy Sector Policy Paper Presentation	August 2008	IDBDocs#36846507
	Multipurpose Development Plan	June 2006	IDBDocs#36846489
	Bioenergy Potential in Suriname	January 2011	IDBDocs#36846486
	Energy Sector Note	August 2011	IDBDocs#36846441
Missions	Special mission	July 2011	IDBDocs#36846520